

**AMENDMENTS TO THE TITLE:**

**Please amend the title beginning at page 1, line 1, as follows:**

~~CONSTANT CURRENT CIRCUIT AND ACTIVE FILTER CIRCUIT USING THE  
SAME~~

TEMPERATURE INDEPENDENT CURRENT SOURCE AND ACTIVE  
FILTER CIRCUIT USING THE SAME

**HAYES SOLOWAY P.C.**  
3450 E. SUNRISE DRIVE,  
SUITE 140  
TUCSON, AZ 85718  
TEL. 520.882.7623  
FAX. 520.882.7643

175 CANAL STREET  
MANCHESTER, NH 03101  
TEL. 603.668.1400  
FAX. 603.668.8567

**AMENDMENTS TO THE SPECIFICATION:**

**Please amend the paragraph beginning at page 1, line 18, as follows:**

Japanese Patent Publication 1998-284989 discloses an active filter circuit which includes a temperature-compensation current source as an extra power supply unit of main DC power source. Currents produced by the DC power source and the extra power supply unit are combined to drive a Gm-C filter. By varying the input current of the Gm-C filter according to temperature drift, the cut-off frequency of the filter is kept constant. However, the use of the extra power unit for temperature compensation requires the circuit designer to estimate all possible temperature variations and prepare reference test data based on the estimated temperature variations. The reference test data is used to adjust the output current of the extra power unit corresponding to the estimated temperature variations. While this prior art is satisfactory if the estimated temperature variations are accurate, the disclosed technique is limited for a particular type of ~~filters~~ filter. Furthermore, the prior art is incapable of compensating for the uniformly drifted variations of resistors caused by variability of manufacturing process.

**Please amend the paragraph beginning at page 6, line 18, as follows:**

Current source 41 is of a  $V_{BE}$ -dependent type. Current source 41 includes a PNP transistor 60 whose base is connected to the bases of transistors 50, 51, 70, 71. The emitter of transistor 60 is connected to the voltage source  $V_{CC}$  via a resistor 61 and its collector is connected to a circuit node N1 to which the base of an NPN transistor 62 and the collector of an NPN transistor 63 are connected. The emitter of transistor 62 and the base of transistor 63 are connected together to a circuit node N2 which is grounded via a resistor 65. The ~~connector~~ collector of transistor 62 is connected to the output terminal 43. The emitter of transistor 63 is

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connected to ground via a resistor 64.

**Please amend the paragraph beginning at page 7, line 18, as follows:**

When the current  $I_{out}$  is supplied to the node 36 of active filter 10, the NPN transistors 24 and 25 are turned ON. If an input alternating voltage is applied to the terminals ~~34 and 35~~ 31 and 32, the NPN transistors 20 and 21 are turned ON and OFF in a complementary fashion depending on the polarity of the input voltage. As a result, when the transistor 20 is ON, it draws a current from the current source 22 to ground through transistor 24 and resistor 26, and when the transistor 21 is ON, it draws a current from the current source 23 to ground through transistor 25 and resistor 27.

**Please amend the paragraph beginning at page 10, line 22, as follows:**

The emitters of transistor group G are connected together to a point which is connected through resistors 96 [[an]] and 97 to ground, while the emitter of transistor 94 is connected to a circuit node N4 which is formed between the resistors 96 and 97. Current source 41B further includes an NPN transistor 95 whose collector is connected to the output terminal 43, its emitter being coupled through a resistor 99 to ground. The bases of transistors 94, 95 and transistor group G are connected together to the circuit node N5. PNP transistors 90 and 91 constitute a current mirror with the PNP transistors 50, 51, 70 and 71. Since the PNP transistors 90 and 91 have their collectors not coupled together unlike transistors 50, 51 and 70, 71, one-half of the current I is drawn through each of the transistors 90 and 91 to the circuit node N4, where these currents are summed to produce a current I through the resistor 97. Therefore, the potentials  $V_{N4}$  and  $V_{N5}$  at the circuit nodes N4 and N5 are given by Equations (11) and (12), respectively.

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—  
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